CLAIMS

What is claimed is:

1   1.   A method for delivering content over a network

2   having at least one requesting endpoint and at

3   least one node, wherein the at least one node

4   stores content, the method comprising:

5   launching a request for content from the at

6   least one requesting end point;

7   propagating the request over the network to

8   the at least one node;

9   leaving a trail of the request at the at

10   least one node; and, when content

11   matching the request is located,

12   returning a copy of the content to the at

13   least one requesting endpoint over the

14   trail of the request.

1   2.   The method of claim 1, wherein the network

2   comprises at least one other endpoint and the

3   method further comprises:

4   propagating the request over the network to

5   the at least one other endpoint; and

6   leaving a trail of the request at the at

7   least one other endpoint.

1   3.   The method of claim 1, wherein the content

2   further comprises a descriptor that enables the

3   at least one node to identify an attribute of

4   the content, and the step of launching a request

5   further comprises:

6   launching the request with a request

7   payload containing one or more

8   instructions on what to locate in the

9   descriptor.

1   4.   The method of claim 3, further comprising:

2   launching the request with a persistence

3   indicator that indicates a duration

4   for which the request is to be

5   preserved at the at least one node.

1   5.   The method of claim 4, wherein the step of

2   leaving a trail of the request further

3   comprises:

4   storing the request at the at least one

5   node for a duration given by the

6   persistence indicator.

1   6.   The method of claim 3, wherein the at least one

2   node further comprises a receiver for receiving

3   the request and identifying an adjacent node

4   from which the request is received, and the

5   method further comprises:

6   comparing the request payload to the

7   descriptor of the content stored at

8   the at least one node; and when the

9   request payload matches the

10   descriptor,

11   forwarding the content with the matching

12   descriptor to the adjacent node.

1   7.   A system for delivering content over a network

2   having at least one requesting endpoint and at

3   least one node, wherein the at least one node

4   stores content, the system comprising:

5   a request launcher for launching a request

6   for content from the at least one

7   requesting end point;

8   a propagator for propagating the request

9   over the network to the at least one

10   node;

11   a request trailer for leaving a trail of

12   the request at the at least one node;

13   and, when content matching the request

14   is located,

15   a content forwarder for returning a copy of

16   the content to the at least one

17   requesting endpoint over the trail of

18   the request.

1   8.   The system of claim 7, wherein the content

2   further comprises a descriptor that enables the

3   at least one node to identify an attribute of

4   the content, and the request launcher further

5   comprises:

6   a launch module for launching the request

7   with a request payload containing one

8   or more instructions on what to locate

9   in the descriptor.

1   9.   The system of claim 8, further comprising:

2   a persistence indicator that indicates a

3   duration for which the request is to

4   be preserved at the at least one node.

1   10. The system of claim 9, wherein the request

2   trailer further comprises:

3   a storage module to enable storing the

4   request at the at least one node for a

5   duration given by the persistence

6   indicator.

1   11. The system of claim 8, wherein the at least one

2   node further comprises a receiver for receiving

3   the request and identifying an adjacent node

4   from which it was received, and the system

5   further comprises:

6   a comparator for comparing the request

7   payload to the descriptor of the

8   content stored at the at least one

9   node; and

10   a forwarder for forwarding, when the

11   request payload matches the

12   descriptor, the content with the

13   matching descriptor to the adjacent

14   node.

1   12. An article of manufacture for delivering content

2   over a network having at least one requesting

3   endpoint and at least one node, wherein the at

4   least one node stores content, the article of

5   manufacture comprising:

6   at least one processor readable carrier;

7   and

8   instructions carried on the at least one

9   carrier;

10   wherein the instructions are configured to be

11   readable from the at least one carrier by at

12   least one processor and thereby cause the at

13   least one processor to operate so as to:

14   launch a request for content from the at

15   least one requesting end point;

16   propagate the request over the network to

17   the at least one node;

18   leave a trail of the request at the at

19   least one node; and, when content

20   matching the request is located,

21   return a copy of the content to the at

22   least one requesting endpoint over the

23   trail of the request.

1   13. A signal embodied in a carrier wave and

2   representing sequences of instructions which,

3   when executed by at least one processor, cause

4   the at least one processor to deliver content

5   over a network having at least one requesting

6   endpoint and at least one node, wherein the at

7   least one node stores content, by performing the

8   steps of:

9   launching a request for content from the at

10   least one requesting end point;

11   propagating the request over the network to

12   the at least one node;

13   leaving a trail of the request at the at

14   least one node; and, when content

15   matching the request is located,

16   returning a copy of the content to the at

17   least one requesting endpoint over the

18   trail of the request.

1   14. A method for transferring content over a network

2   comprising one or more nodes wherein the one or

3   more nodes are enabled to route messages related

4   to   the   transfer   of   content,   the   method

5   comprising the steps of:

6   transmitting a content registration message

7   when new content is available at the

8   one or more nodes, wherein the content

9   registration message advertises to the

10   one or more nodes that the new content

11   is available;

12   transmitting a request registration message

13   when requesting content from the one

14   or more nodes, wherein the request

15   registration message advertises to the

16   one or more nodes an interest in

17   locating a particular content;

18   transmitting a content deliver message when

19   the particular content requested is

20   located at the one or more nodes; and

21   transferring   the   particular   content

22   requested or a copy of the particular

23   content requested toward the one or

24   more nodes from which the request

25   registration message was transmitted.

1   15. The method of claim 14, wherein the step of

2   transmitting a content registration message

3   further comprises:

4   propagating   the   content   registration

5   message to the one or more nodes; and

6   building a routing table entry at the one

7   or more nodes using the content

8   registration message.

1   16. The method of claim 14, wherein the step of

2   transmitting a content registration message

3   further comprises:

4   propagating   the   request   registration

5   message to the one or more nodes; and

6   building a routing table entry at the one

7   or   more   nodes   using   the   request

8   registration message.

1   17.   The   method   of   claim   14,   wherein   the   step   of

2   transmitting   a   request   registration   message

3   further comprises:

4   creating   a   request   registration   message

5   trail.

1   18.   The   method   of   claim   17,   wherein   the   one   or   more

2   nodes   are   enabled   to   store   messages   and   wherein

3   the   step   of   creating   a   request   registration

4   message trail further comprises:

5   storing   a   copy   of   the   request   registration

6   message   at   each   of   the   one   or   more

7   nodes   that   route   the   request

8   registration message.

1   19.   The   method   of   claim   17,   wherein   the   step   of

2   transferring the particular content requested or

3   a copy of the particular content requested

4   toward the one or more nodes from which the

5   request registration message was transmitted

6   further comprises:

7   routing the particular content requested or

8   a copy of the particular content

9   requested along a path marked by the

10   request registration message trail.

1 20. The method of claim 14, wherein the request

2   registration message further comprises:

3   information or operating instructions that

4   are used to locate the particular

5   content.

1 21. The method of claim 14, further comprising:

2   balancing the network load for transferring

3   content by storing copies of content

4   at the one or more nodes.